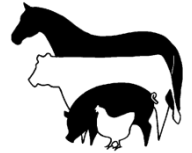




Colorado Department
of Public Health
and Environment

Regulation 81: What are the ground water protection requirements for all CAFOs?



Environmental Agriculture
Program

This fact sheet highlights certain compliance deadlines and requirements of Regulation 81 for all concentrated animal feeding operations (CAFOs) in Colorado. For more details you can access the full text of Regulation 81 online at www.colorado.gov/cdphe/cafos or contact the Ag Program at (303) 692-3523, 3520, 2499 or 3614 with questions.

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All CAFOs in Colorado, whether permitted or not, are required under Regulation 81 to protect Colorado's ground water. The regulation is administered by the Colorado Department of Public Health and Environment's Environmental Agriculture Program (Ag Program). This fact sheet outlines these ground water protection requirements for all CAFOs.

If you
own or operate a Large CAFO,
whether permitted or not, you must
implement Regulation 81 groundwater
protection elements

Impoundment Liner Certifications

Obtain a certification that all impoundments have a liner with a maximum seepage rate of 1×10^{-6} cm/sec. For new impoundments, send a copy of the certification to the Ag Program. The certification must be made by a professional engineer registered in Colorado and must indicate the composition of the liner (e.g., clay, synthetic).

Impoundment Existing or New	Documentation Requirement	Due Date
New impoundments	Submit liner certification and seepage rate calculations to the Ag Program	Within 30 days of completing construction
	Liner certification and seepage rate calculations available at the CAFO	Before wastewater enters the impoundment
Existing Impoundments	Liner certification available at the CAFO	Deadline has passed, but documentation must be available at the CAFO and submitted to the Ag Program upon

Impoundment Liner Inspections

Inspect all impoundment liners (earthen and synthetic) for problems that could affect the integrity of the liner and keep records of the inspections as well as of any corrective actions that were taken to address problems identified. Example inspection forms can be found online at www.colorado.gov/cdphe/cafos.

Depth Markers

Make sure that your depth markers are installed in a manner that maintains the integrity of the impoundment liner and the required seepage rate. Maintain documentation of how depth markers were installed in your facility records (permitted CAFOs) or Facility Management Plan (FMP, large non-permitted CAFOs).

Setbacks

If you build a new impoundment (or expand an existing impoundment by 50% or more) the impoundment must be built so that the seasonally high groundwater level does not come within four feet of the impoundment liner. If seasonally high ground water is within 4 feet of the liner, construct and maintain the impoundment according to a design by a professional engineer registered in Colorado. The design must prevent ground water from contacting the liner. In addition, a new impoundment needs to be more than 100 feet from a private domestic water supply well and 300 feet from a community domestic water supply well.



ARS/USDA

Standard Operating Procedures (SOPs) and Certifications for Removing Manure from Impoundments

Submit to the Ag Program for approval an SOP describing how manure will be removed from each impoundment in a way that does not damage the liner. The SOP must specify how often manure will be removed from each impoundment. Keep in mind that a revised SOP is to be submitted to the Ag Program for approval within 30 days of making a change to an impoundment that requires an update to the SOP. A blank SOP template is available online at www.colorado.gov/cdphe/cafos.

	Documentation Requirement	Due Date
New impoundments	Submit SOP to the Ag Program for approval	Within 120 days of placing animals on the production area

Each time manure is removed from an impoundment, certify that the manure was removed as specified in the approved SOP. An example certification form is included in the SOP template available online.

For concrete-lined impoundments that are cleaned frequently (slurry pits, etc.), you may evaluate the liner integrity every 5 years instead of certifying each manure removal. This type of evaluation involves completely draining, cleaning, and inspecting the concrete liner to determine whether the liner integrity has been maintained.

If you have not submitted an SOP for your facility, you should do so as soon as possible. A blank SOP template is available online at www.colorado.gov/cdphe/cafos or you may contact the Ag Program with questions.

Earthen Wastewater Conveyance Structures

Maintain earthen conveyance structures to minimize wastewater ponding. Check the regulations [81.7(5)] for conveyance structure construction standards.

Ground Water Monitoring and Remediation

If the Ag Program finds that your CAFO has not complied with Regulation 81, you may be required to monitor ground water quality or even remediate contaminated ground water. The Ag Program will make these determinations on a case-by-case basis.

Impoundment Closure

If you close an impoundment, remove all manure and wastewater within 60 days of closing the impoundment. Within 120 days of closure, backfill the impoundment and grade the soil to blend with surface topography to prevent ponding. Alternate closure procedures may be used if approved by the Ag Program.



Summary of Inspection and Recordkeeping Requirements

Requirement	Frequency*
Visually inspect impoundment liners. Look for cracks, erosion, rodent holes and other evidence that the liner might be damaged. Record the date of each visual inspection.	Weekly
Record any deficiencies identified, corrective actions completed, and corrective action completion dates.	As needed if deficiencies are identified
Certify that manure or sludge was removed in accordance with the approved SOP.	After each manure or sludge removal
Alternative option for concrete-lined impoundments: Drain and clean the impoundment and use best professional judgment to determine whether the liner integrity is capable of having a maximum seepage rate of 1×10^{-6} cm/sec.	Every 5 years. The determination must be documented within 5 days and include photographs supporting the determination.
Keep SOP and liner certifications on-site.	Maintain as long as in operation

* Remember to keep all records on-site for 5 years.